Science Curriculum Map

Science	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
YEAR 7	C1 The Particle Model P10 The Particle Model (density) B1 Cells	Assessment P1 Energy	B8 Ecosystems C2 Atoms, Elements and Compounds C6 The Periodic Table	Assessment P2 Speed	C3 Pure and Impure Substances P7 Electricity in Circuits	Assessment B2 Skeletal and muscular Systems and Organisation
Curriculum Map	**C1 The Particle Model** 1. Simple particle model 2. Properties of different states of matter 3. Changes of state **P10 The Particle Model (density)** 1. Particle motion and density 2. Energy in matter **B1 Cells** 1. Microscopes 2. Cell structure 3. Animal and plant cells 4. Magnification 5. Unicellular organisms 6. Diffusion 7. Specialised cells	**Assessment** 1. Assessment 2. Assessment feedback **P1 Energy** 1. Fuels and energy stores 2. Energy stores and transfers 3. Power 4. Energy resources	**B8 Ecosystems** 1. Food chains 2. Food webs and interdependence 3. Insect pollination and food security **C2 Atoms, Elements and Compounds** 1. The atomic model 2. Symbols and formulae 3. Elements and compounds **C6 The Periodic Table** 1. Properties of metals and non-metals 2. Groups, periods, metals and non-metals	**Assessment** 1. Assessment 2. Assessment feedback **P2 Speed** 1. Speed 2. Distance-time graphs 3. Relative motion	**C3 Pure and Impure Substances** 1. Diffusion 2. Pure and impure 3. Elements and compounds **P7 Electricity in Circuits** 1. Conductors and insulators 2. Circuits, current, potential difference and resistance 3. Series and parallel circuits	**Assessment** 1. Assessment 2. Assessment feedback **B2 Skeletal and muscuar systems and organisation** 1. The skeleton 2. Biomechanics 3. Principles of organisation
YEAR 8	B6 Photosynthesis C4 Chemical reactions	Assessment B8 Ecosystems C6 The Periodic Table	B4 Gas Exchange Systems B7 Respiration C7 Materials	Assessment P5 Sound P9 Magnets	B5 Reproduction B9 Inheritance C8 The earth and its Atmosphere	Assessment B3 Nutrition and Digestion
Curriculum Map	**B6 Photosynthesis** 1. Photosynthesis 2. Leaf structure **C4 Chemical reactions** 1. Reactions, conventions and signs a reaction has occurred 2. Combustion, thermal decomposition, oxidation and displacement 3. Conservation of mass 4. Acids, alkalis and pH 5. Reactions of acids with metals and alkalis	**Assessment** 1. Assessment 2. Assessment feedback **B8 Ecosystems** 1. Food chains 2. Food webs and interdependence 3. Insect pollination and food security **C6 The Periodic Table** 1. Properties of metals and non-metals 2. Groups, periods, metals and non-metals	**B4 Gas Exchange Systems** 1. Ventilation 2. Gas exchange **B7 Respiration** 1. Aerobic respiration 2. Anaerobic respiration **C7 Materials** 1. Metal reactivity 2. Metal extraction with carbon 3. Ceramics, polymers and composites (triple)	**Assessment** 1. Assessment 2. Assessment feedback **P5 Sound and P6** 1. Types of wave 2. light basics **P9 Magnets** 1. Magnets and magnetic fields 2. Earth's magnetism 3. Electromagnetics and motors	**B5 Reproduction** 1. Sexual reproduction and the reproductive organs 2. Fertilisation **B9 Inheritance** 1. DNA and chromosomes 2. Variation 3. Competition and natural selection 4. Biodiversity **C8 The earth and its Atmosphere** 1. Composition of the atmosphere	**Assessment** 1. Assessment 2. Assessment feedback **B3 Nutrition and Digestion** 1. Healthy diet, energy requirements and dietary imbalance 2. Digestive organs 3. Gut bacteria
YEAR 9	B1 Key Concepts in Biology C1 Key Concepts in Chemistry	Assessment P2 Motion and Forces P3 Conservation of Energy B2 Cells and Control	C2 States of Matter B3 Genetics C3 Chemical Changes	Assessment P4 Waves P5 Light and the EM Spectrum B4 Natural Selection and Genetic Engineering	C4 Extracting Metals and Equilibria B5 Health, Disease and the Development of Medicine	Assessment P6 Radioactivity

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Curriculum Map	**B1 Key Concepts in Biology** 1. Cells 2. Specialised cells 3. Microscopes and magnification 4. Enzymes 5. Transport in cells **C1 Key Concepts in Chemistry** 1. Atomic structure 2. History of the atom 3. Isotopes 4. The Periodic Table 5. Mendeleev's table 6. Ionic bonding 7. Covalent bonding 8. Types of substance 9. Calculations involving masses	**Assessment** 1. Assessment 2. Assessment Feedback **P2 Motion and Forces** 1. Scalars and vectors 2. Speed and typical speeds 3. Distance-time graphs 4. Acceleration 5. Velocity-time graphs 6. Newton's laws 7. Momentum (H) 8. Reaction time and stopping distance **P3 Conservation of Energy** 1. Energy stores and transfers 1. Gravitational potential energy 2. Kinetic energy 3. Sankey diagrams and efficiency 4. Energy resources **B2 Cells and Control** 1. Cell cycle and mitosis 2. Uncontrolled cell division 3. Growth and percentile charts 4. Stem cells 5. CNS and reflex arc	**C2 States of Matter** 1. States of matter 2. Methods of separating and purifying substances **B3 Genetics** 1. Meiosis 2. Structure of DNA 3. Extracting DNA from fruit 4. Monohybrid inheritance 5. Genetic diagrams 6. Sex determination 7. Variation **C3 Chemical Changes** 1. Acids and alkalis 2. Electrolysis	**Assessment** 1. Assessment 2. Assessment feedback **P4 Waves** 1. Waves and types of wave 2. Features of a transverse wave 3. Speed of waves 4. Refraction 5. Absorbtion, transmission and reflection (H) **P5 Light and the EM Spectrum** 1. EM spectrum 2. Velocities of the EM waves (H) 3. Dangers and uses of EM waves **B4 Natural Selection and Genetic Engineering** 1. Evolution and natural selection 2. Evidence for human evolution 3. Selective breeding 4. Genetic engineering	**C4 Extracting Metals and Equilibria** 1. Relative reactivity of metals 2. Redox reactions (H) 3. Extracting metals 4. Recycling and life-cycle assessment 5. Reversible reactions 6. Dynamic equilibrium 7. Haber process 8. Position of dynamic equilibrium (H) **B5 Health, Disease and the Development of Medicine** 1. WHO and health 2. Communicable and non-communicable diseases 3. Pathogens and how they're spread 4. Common infections 5. STIs 6. Chemical and physical barriers 7. Specific immune system 8. Development of medicines 9. Lifestyle factors and treatment	**Assessment** 1. Assessment 2. Assessment feedback **P6 Radioactivity** 1. Atomic structure 2. Isotopes 3. Ions 4. Types of ionising radiation 5. Radioactivity 6. Background radiation 7. Detecting and measuring radiation 8. Half-life 9. Dangers of radiation and safety precautions 10. Contamination and irradiation
YEAR 10	B1 Key Concepts in Biology C1 Key Concepts in Chemistry P2 Motion and Forces	Assessment P3 Conservation of Energy B2 Cells and Control C2 States of Matter	B3 Genetics C3 Chemical Changes P4 Waves P5 Light and the EM Spectrum	Assessment B4 Natural Selection and Genetic Engineering C4 Extracting Metals and Equilibria B5 Health, Disease and the Development of Medicine	P6 Radioactivity Paper 1 Topics Review	Assessment B6 Plant Structures and their Functions B7 Animal Coordination, Control and Homeostasis B8 Exchange and Transport in Animals B9 Ecosystems and Material Cycles

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YEAR 11	C6 Groups in the Periodic Table C7 Rates of Reaction and Energy Changes C8 Fuels and Earth Science B9 Ecosystems and Material Cycles	Assessment P8 Energy – Forces Doing Work P9 Forces and their Effects P10 Electricity and Circuits	P12 Magnetism and the Motor Effect P13 Electromagnetic Induction Paper 2 Topics Review	Assessment Revision of All Topics	Revision of All Topics	GCSEs

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Curriculum Map	**C6 Groups in the Periodic Table** 1. Group 1 2. Group 7 3. Group 0 **C7 Rates of Reaction and Energy Changes** 1. Reactions 2. Rates of reaction 3. Factors affecting rate of reaction 4. Exothermic and endothermic reactions **C8 Fuels and Earth Science** 1. Hydrocarbons 2. Crude oil 3. Fractions of crude oil 4. Properties of the fractions of crude oil 5. Homogolous series 6. Complete and incomplete combustion 7. Fuels 8. Cracking **B9 Ecosystems and Material Cycles** 1. Levels of organisation 2. Biotic and abiotic factors 3. Interdependance 4. Number of organisms in an area 5. Human interaction 6. Biodiversity 7. Material cycles	**Assessment** 1. Assessment 2. Assessment feedback **P8 Energy – Forces Doing Work** 1. Energy stores and transfers 2. Work done 3. Gravitational potential energy 4. Kinetic energy 5. Energy dissipation 6. Power 7. Efficiency **P9 Forces and their Effects** 1. Contact and non-contact forces 2. Scalars and vectors 3. Vector and free body diagrams (H) 4. Reducing unwanted energy transfers **P10 Electricity and Circuits** 1. Atomic structure 2. Circuit symbols 3. Series and parallel circuits 4. Current and potential difference 5. Energy transferred 6. Charge 7. Resistance 8. Energy dissipation 9. Current heating effect 10. Power 11. A.C and D.C 12. The plug	**P12 Magnetism and the Motor Effect** 1. Magnets 2. Permanent and temporary magnets 3. Magnetic field 4. Current and magnetic field 5. Solenoids 6. Magnetic forces (H) 7. Left-hand rule (H) **P13 Electromagnetic Induction** 1. National grid 2. Transformers	**Assessment** 1. Assessment 2. Assessment feedback **Revision of All Topics**	**Revision of All Topics**	